Claims

1. A plate heat exchanger including a number of heat exchanger plates (1, 1', 1''), which are arranged beside each other and connected to each other by means of a braze connection,
wherein the heat exchanger plates (1, 1', 1'') are substantially manufactured in stainless steel containing chromium,
wherein the plate heat exchanger includes a number of port channels (4) extending through at least some of the heat exchanger plates, and
wherein one or more of the port channels (4) are surrounded by a connection surface (5) for connection of the port channel to a pipe member (6),
characterised in that the connection surface (5) includes a material that permits brazing of said pipe member (6) to the connection surface (5) in a more easy manner than to stainless steel.

A plate heat exchanger according to claim 1, characterised in that said material is more reduction susceptible than chromium dioxide.

3. A plate heat exchanger according to anyone of claims 1 and 2, characterised in that said material includes at least one of the materials copper and nickel.

4. A plate heat exchanger according to anyone of the preceding claims, characterised in that said braze connection of the heat exchanger plates is accomplished by a braze process.

5. A plate heat exchanger according to anyone of the preceding claims, characterised in that said material is bound to the stainless steel through diffusion.

6. A plate heat exchanger according to claims 4 and 5, characterised in that said diffusion is accomplished during said braze process.

7. A plate heat exchanger according to anyone of the preceding claims, characterised in that one of said heat exchanger plates (1, 1′, 1′′) forms an outer heat exchanger plate (1′) which has a respective outer surface area surrounding a respective port channel.

8. A plate heat exchanger according to claim 7, characterised in that said material is supplied to the outer surface area for forming said connection surface (5).

9. A plate heat exchanger according to anyone of the preceding claims, characterised in that the plate heat exchanger includes a connection member (8; 9) at each port channel (4), wherein the connection member (8, 9) forms said connection surface (5).

10. A plate heat exchanger according to claims 7 and 9, characterised in that the connection member (8, 9) is attached to outer surface area.

11. A plate heat exchanger according to anyone of claims 9 and 10, characterised in that the connection member (8, 9) has a primary surface onto which said material is applied for forming said connection surface (5).

12 A plate heat exchanger according to claim, characterised in that the primary surface has a rough surface finish, which is accomplished through abrasive blasting or any similar roughening process and which facilitates wetting of the primary surface with said material.

13. A plate heat exchanger according to claims 4 and 12, characterised in that said material has been applied onto the primary surface by means of and during the braze process.

14. A plate heat exchanger according to anyone of claims 9 to 13, characterised in that the connection member (8,9) is substantially manufactured in a stainless containing chromium.

15. A plate heat exchanger according to anyone of claims 9 and 10, characterised in that the connection member (8, 9) is manufactured in an alloy substantially containing copper and nickel.

16. A plate heat exchanger according to claim 15, characterised in that said alloy contains 55 to 95 percent by weight copper and 5 to 45 percent by weight nickel.

17. A plate heat exchanger according to anyone of claims 9 and 16, characterised in that the connection member is designed as a pipe nipple (8).

18. A plate heat exchanger according to anyone of claims 9 and 16, characterised in that the connection member is designed as a washer (8).

19. A method for manufacturing a plate heat exchanger including a number of heat exchanger plates, which are substantially manufactured in stainless steel containing chromium, and including a number of port channels extending through at least some of the heat exchanger plates,
wherein one or more of the port channels are surrounded by a connection surface for connection of the port channel to a pipe member,
wherein the method includes the steps of:

applying a material, which forms the connection surface and which permits brazing of said pipe member to the connection surface in a more easy manner than to stainless steel,
arranging the heat exchanger plates beside each other, and
joining the heat exchanger plates to each other by means of a braze connection.

20. A method according to claim 19, wherein said material is more reduction susceptible than chromium dioxide.

21. A method according to anyone of claims 19 and 20, wherein said material includes at least one of the materials copper and nickel.

22. A method according to anyone of claims 19 to 21, wherein said connection step includes a braze process with brazing of the heat exchanger plates at vacuum-like pressure conditions or in an atmosphere with substantially inert gas or a reducing gas.

23. A method according to anyone of claims 19 to 22, wherein the brazing is performed in such a manner that said material is bound to the stainless steel through diffusion.

24. A method according to anyone of claims 19 to 23, wherein one of said heat exchanger plates forms an outer heat exchanger plate having a respective outer surface area surrounding a respective port channel and wherein said application step includes that said material is applied to the outer surface area for forming said connection surface.

25. A method according to anyone of claim 19 to 24, wherein one of said heat exchanger plates forms an outer heat exchanger plate having a respective outer surface area surrounding a respective port channel and wherein the method includes the step of:

applying a connection member to the outer surface area at each port channel before said connection step, wherein the connection member forms said connection surface.

26. A method according to claim 25, wherein the connection member has a primary surface and wherein said application step includes applying said material to the primary surface for forming said connection surface by means of and during said braze process.

27. A method according to claim 26, including the initial step roughening the primary surface through blasting or the like for accomplishing rough surface finish facilitating wetting of the primary surface by said material during said braze process.

28. A method according to claims 25 to 27, wherein the connection member (8, 9) is substantially manufactured in stainless steel containing chromium.

29. A method according to claim 25, wherein the connection member (8; 9) is substantially manufactured in an alloy substantially containing copper and nickel.

30. A method according to claim 29, wherein said alloy includes 55 to 95 percent by weight copper and 5 to 45 percent by weight nickel.